

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the adhesive tape which used the nonwoven fabric as the base material.

[0002]

[Description of the Prior Art]The adhesive tape which uses a nonwoven fabric as a base material is known (for example, refer to the 58th page of adhesive tape industrial meeting issue "adhesion handbook" on March 2, Showa 60), It is used for various uses, such as the object for floor care of health, the object for a seal, the object for union, the object for move temporary stops, the object for bookbinding / repair, an object for poster ****, an object for line tapes, an object for surface protections, an object for masking, and an object for electric insulation.

[0003]By the way, in order for elements, such as coverage of a base material, a binder, and a binder, to serve as the Trinity, to reveal the performance and for adhesive tape to fully fulfill each demand quality, the design which combined the optimal element for each is needed.

[0004]In the adhesive tape used as a base material, a nonwoven fabric as a nonwoven fabric of a base material, That having moderate pliability and intensity, being able to adjust this pliability and intensity easily and having solatium nature does not carry out a paste residue as an adhesive layer which was generally required and was applied to this base material, to excel in weatherability, to excel in removability, etc. are demanded.

[0005]

[Problem(s) to be Solved by the Invention]By the way, the adhesive tape that all the above-mentioned performances required of a base material or an adhesive layer might fully be revealed was not yet seen.

[0006]In view of the above-mentioned point, this invention has the dramatically flexible waist,

and has solatium nature, and an object of an invention is to provide adhesive tape with few paste residues.

[0007]

[Means for Solving the Problem]An invention concerning claim 1 statement forms a polyolefin layer in the whole surface of a nonwoven fabric, it is the adhesive tape which is alike on the other hand and forms an adhesive layer, and the above-mentioned nonwoven fabric, At least some textiles consist of polyester or polyolefine, and arrangement of the textiles is the adhesive tape which carries out performing heating compression processing to not less than 15% of portion by surface ratio to a nonwoven fabric which are 1:1-8:1 in a vertical:horizontal ratio with the feature.

[0008]In an invention concerning claim 2 statement, the main ingredients of an adhesive layer consist of styrene isoprene styrene block copolymer and crude rubber, A content ratio of this styrene isoprene styrene block copolymer and crude rubber is the adhesive tape according to claim 1 being 25:75-80:20 in a weight ratio.

[0009]In this invention, as for polyolefines which constitute a nonwoven fabric of a base material, such as polyester as textiles or polyethylene, and polypropylene, that whose yarn diameters are 1.0-2.5micro is used suitably.

[0010]And a ratio of textiles arranged in a lengthwise direction and textiles arranged in a transverse direction needs to be 1:1-8:1. If vertical ductility at the time of vertical arrangement using that it is less than one to the lateral arrangement 1 at adhesive tape becomes large too much, sticking work nature falls and vertical arrangement exceeds 8 to the lateral arrangement 1 conversely, It is because vertical ductility is stopped too much, and stress relaxation of a base material does not fully work at the time of re peeling off but there are the time of re peeling off and a possibility that it may wind and unfold and a base material may sometimes fracture.

[0011]It is required for a nonwoven fabric to perform heating compression processing to not less than 15% of portion at surface ratio, by performing this heating compression processing, elongation of a nonwoven fabric can be suppressed and not less than 20% is needed preferably. 20 to 100% of heating compression area of a nonwoven fabric is [vehicles paint] suitable for a ceiling about 25 to 28% about 20 to 30% to a construction paint important point and electric insulation.

[0012]A method of compressing through between hot calender rolls as the above-mentioned heating compression means is recommended. For example, it processes by the roll pressure 6 - 10 kg/cm with an about 200-300 ** hot calender roll.

[0013]A polyolefin layer formed in the whole surface of a nonwoven fabric is formed by laminating polyethylene, polypropylene, etc., and usually let it be a thickness of about 8-25micro. It is because the waist will become strong too much conversely in less than 8micro if

the waist of a base material exceeds past [weakness] and 25 micro.

[0014]In an invention concerning claim 2 statement, although SIS and crude rubber are the main ingredients of an adhesive layer, a tackifier, a softener, etc. are usually added by this and an antiaging agent, a bulking agent, paints, etc. are added if needed.

[0015]SIS and crude rubber of the main ingredients of a binder are because a paste residue happens easily that SIS is less than 25 weight sections at the time of re peeling off that the content ratio is 25:75-80:20 in a weight ratio, wettability will become small if 80 weight sections are exceeded conversely, and adhesiveness is no longer revealed fully.

[0016]What is used from the former can be used as a tackifier, for example, rosin system resin, such as rosin, denaturation rosin, and rosin ester, terpene series resin, terpene phenol system resin, coumarone-indene resin, various kinds of petroleum resin, styrene resin, etc. are raised. An addition of this tackifier has 20 to 70 preferred weight section to SIS and crude rubber 100 weight section. It is because it will become easy to carry out a paste residue in less than 20 weight sections also in an ordinary temperature region in order to cover the expenses of Tg (glass transition temperature) if it is not fully revealed and an adhesion grant function exceeds 70 weight sections.

[0017]As a softener, various kinds of petroleum system oil, tall oil, polybdenum, etc. are raised. As an addition of this softener, two to 40 weight section is preferred to SIS and crude rubber 100 weight section. It is because it will become easy to carry out a paste residue in less than the amount part of duplexs if wettability becomes small, and adhesiveness is not fully revealed but 40 weight sections are exceeded.

[0018]Low-molecular-weight polyethylene wax, paraffin wax, etc. can be added, and removability can be raised from adding about 0.5-40 weight sections of these to SIS and crude rubber 100 weight section.

[0019]As for an adhesive layer, it is preferred to apply a binder to a base material and to form it at a rate of 30 - 100 g/m², by solid content.

[0020]

[Embodiment of the Invention]The following examples explain this embodiment of the invention. The "part" in an example means a "weight section."

[0021](Example 1) It consists of polyester yarn (yarn diameter of an average of 2.0micro) as a base material, Length : about what laminated polypropylene at 20micro thickness at the back of the texture type nonwoven fabric (basis weight 15 g/m²) of the horizontal ratio 2:1. What becomes 20% of portion from the presentation of 50 copies of SIS, 50 copies of crude rubber, 50 copies of terpene resin, and ten copies of polybutene as a binder using what performed heating compression processing (60micro in thickness) by the surface ratio was used. The above-mentioned binder was applied so that an adhesive layer might become the above-mentioned base material with 50 micro, and it dried for 2 minutes in 120 ** dry oven, and

adhesive tape was obtained.

(Example 2) Adhesive tape was obtained like Example 1 except having used as a binder the binder which consists of a presentation of 50 copies of SIS, 50 copies of crude rubber, 50 copies of terpene resin, and ten copies of low-molecular-weight polyethylene wax.

(Example 3) Adhesive tape was obtained like Example 1 except having used the binder which consists of a presentation of ten copies of SIS, 90 copies of crude rubber, 50 copies of terpene resin, and ten copies of polybutene.

(Comparative example 1) Adhesive tape was obtained like Example 3 except having performed heating compression processing for the nonwoven fabric to 10% of portion by surface ratio (60micro in thickness of a base material).

(Comparative example 2) Adhesive tape was obtained like Example 1 except having used the binder used in Example 3, using a uniaxial-stretching polypropylene film (40micro in thickness) with solatium nature as a base material.

[0022]About each of the above-mentioned adhesive tape, while measuring a ball tuck (1/32 inch), SP adhesive power (g/15mm), tensile strength (kg/15mm), and ductility (%), the service test about solatium nature and a paste residue was done.

[0023]An above-mentioned measuring method and valuation method were based on the method as follows.

Ball tuck: It is based on the ball tuck examining method specified to JIS Z 0237.

SP adhesive power: It is based on the adhesive power (tearing off 180 degrees law) examining method specified to JIS Z 0237.

Tensile strength and ductility: It is based on the tensile strength and the extension test method of JIS Z 0237.

Solatium nature: Three steps of evaluations of A (O), right (**), and a defect (x) were performed by seven test subjects' organoleptics about each adhesive tape.

Paste residue: After sticking each sample on SP board, measurement calculation of the area ratio (%) when it tears off in the direction of 180° in SHOPPA after a two-week outdoor exposure at the south face was done. To adherend, adherend was approached itself and the adhesive tape of Examples 1 and 2 was installed tentatively also at the place of several centimeters.

These results were as being shown in Table 1.

[0024]

[Table 1]

	実施例			比較例	
	1	2	3	2	3
S P 粘着力 (g/15mm)	235	210	285	295	265
ボールクック (1/32インチ)	24	16	25	26	11
引張強度 (kg/15mm)	2.7	3.1	3.0	2.4	2.9
伸 度 (%)	25	22	23	35	199
手切れ性	○	○	○	×	△
糊残り (%)	10	0	30	—	>90

[0025]

[Effect of the Invention]As stated above, the adhesive tape of this invention, By having solatium nature intrinsically, changing the arrangement of textiles within the limits of 1:1-8:1 by a vertical:horizontal ratio, or changing the rate of a heating compression ratio etc. If the solatium intensity can be adjusted and the quality design of the adhesive tape by a use becomes easy, and the waist is dramatically flexible and it brings close to adherend at the place of several centimeters, since it will be induced and will be installed tentatively by adherend, before being stuck by pressure, it can remove any number of times and a sticking position can be corrected.

[0026]In the adhesive tape of this invention, by making the main ingredients of a binder into SIS and crude rubber, and setting that content ratio to 25:75-80:20 by a weight ratio, adhesive power and removability can be balanced and it excels in removability more.

[Translation done.]